

R E M A R K S

Claims 1 through 45 are in the application, with Claims 1, 5, 17, 31 and 37 having been amended. Claims 1, 5, 17, 28 and 37 are the independent claims herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claim Rejections under 35 USC § 102(e)

Claims 1-2 are rejected as being anticipated by U.S. Patent No. 6,687,707 (“Shorter”).

The present application is concerned with a computer program that automatically examines another program to determine whether the other program will execute properly. More specifically, the invention is concerned with examining input attributes of commands, in the order in which the commands may be performed during execution of the program under examination, to determine whether the input attributes will be properly resolved during execution. Still more specifically, it is determined whether an input attribute will be properly resolved by determining whether an output attribute which is the source of the input attribute will have been resolved by the program under examination prior to the time when the input attribute needs to be resolved.

The Shorter reference is quite different from the invention as recited in claim 1. Shorter describes a technique for assigning a unique identifier to an object to be added to a data processing system that is part of a network that is part of a system of networks. The unique object identifier includes fields that identify the network to which the object is to be added and the host system within that network, as well as a field that uniquely identifies the object within the host system.

Shorter describes various behaviors of a computer program during execution, but does not describe a process for examining a computer program before execution to determine whether there will be problems during execution. Applicant also believes it is important to distinguish between the activity of resolving an attribute or parameter versus the activity of indicating that a parameter or attribute is resolved. Resolving an attribute or parameter may occur during execution of a program, whereas indicating that a parameter is resolved occurs, according to the invention, during a process performed before execution of the program to verify that the program

will execute properly. Arguably Shorter discloses operation of a software program in which search attributes are “resolved” by finding a matching object. But this is different from the present invention in which a program is examined prior to execution to indicate whether attributes would be resolved during execution.

Claim 1 has now been amended to be more clearly distinguished from the Shorter reference. As now amended, claim 1 is directed to a “method in a computer system for determining resolution of attributes of a program”. The method of claim 1 includes “providing a program having interactions”, where “each interaction ha[s] commands with attributes”. The method of claim 1 further includes “identifying a sequence of interactions of the program”. Still further, the following are performed for each input attribute of each command of each interaction of the identified sequence of interactions: “identifying an output attribute corresponding to the input attribute”, “indicating that the input attribute is resolved if the identified output attribute has been indicated as resolved”, and “indicating that the input attribute is not resolved if the identified output attribute has not been indicated as resolved”.

Finally, for each output attribute of each command of each interaction of the identified sequence of interactions, it is indicated that the output attribute is resolved.

Applicant wishes to particularly point out that the Shorter reference fails to disclose indicating that an input attribute is resolved if a corresponding output attribute has been indicated as resolved, and indicating that the input attribute is not resolved if the corresponding output attribute has not been indicated as resolved. The Examiner has cited certain passages of Shorter as particularly relevant--namely, column 9, lines 50-67, column 10, lines 1-5 and column 10, lines 47-60. Arguably these passages have to do with resolving attributes (or at least resolving objects).¹ However these passages do not teach or suggest indicating that an attribute is resolved or not resolved, as recited in claim 1.

For the foregoing reasons, it is respectfully submitted that claim 1, at least as now presented, is patentably distinguished from the Shorter reference.

Claim 2 is dependent on claim 1 and is submitted as patentable for the same reasons as claim 1.

¹ These passages could be more accurately characterized as being concerned with determining whether an object matches a search inquiry.

Claim Rejections under 35 USC § 103(a)

Claims 3 and 4 are rejected as being unpatentable over Shorter ('707) and further in view of official notice.

Claims 3 and 4 are dependent on claim 1 and are submitted as patentable for the same reasons as claim 1.

Moreover, in regard to claim 3 the Examiner purportedly took "official notice" of "suppressing the reporting of input attribute". Applicant respectfully challenges this assertion of official notice. The concept of suppressing reporting of input attributes (e.g., when the attribute may be resolved by user input, as recited in claim 3) is introduced by the present application in the context of otherwise reporting input attributes that are unresolved. Also, this context relates to the broad concept of the present invention of examining a program prior to execution to determine whether input attributes are properly resolved by the time they are needed during a sequence of operations of the program. Neither this broad concept, nor the concept of reporting input attributes that are not resolved, nor the concept of suppressing the reporting of input attributes in some cases, are believed to be known in the prior art, let alone sufficiently well-known and notorious to justify an assertion of official notice.

It is accordingly submitted that claim 3 is patentable on grounds that are independent of the patentability of claim 1, and that the rejection of claim 3 should be withdrawn.

Claim 4 recites the additional limitation of "suppressing the reporting of input attributes of primitive types". In regard to claim 4, the Examiner took official notice of "primitive type attribute". Applicants do not dispute that primitive type attributes are well known. However, it does not follow that it would have been obvious to suppress reporting of such input attributes. The Examiner's stated rationale for finding claim 4 obvious, "because one of ordinary skill in the art would be motivated to get the flexibility to reuse the input attribute" does not make any sense, since suppressing reporting of input attributes has nothing to do with whether such attributes can be reused.

It is accordingly submitted that claim 4 is patentable on grounds that are independent of the patentability of claim 1, and that the rejection of claim 4 should be withdrawn.

Claims 5-45 are rejected as being unpatentable over U.S. Patent No. 6,658,450 ("Balakrishnan") and further in view of Shorter ('707).

Claims 15 and 26 are rejected as being unpatentable over Balakrishnan ('450), Shorter ('707) and further in view of Official notice.

Claim 5 is directed to a "method for verifying resolution of input parameters of functions of a computer program before executing the computer program". The method of claim 5 includes "providing a path of execution of the computer program", where "the path of execution identifi[es] a sequence of functions of the computer program". Each function is processed with respect to each input parameter of the function by "indicating that the input parameter is resolved if a corresponding output parameter has been indicated as resolved as a result of a function in the path of execution having previously been processed". The processing of each function also includes with respect to each output parameter, "indicating that the output parameter is resolved".

The remarks made above with respect to claim 1 are generally applicable to claim 5. It is noted that claim 5 is directed to indicating that an input parameter is resolved, not to resolving the input parameter. The Balakrishnan reference discloses a system which allows for communication among a plurality of collaborating computer processes. Balakrishnan describes behavior of a computer program during execution, but like Shorter is not concerned with examining a program prior to execution.

Further, Balakrishnan does not disclose indicating that parameters are resolved. For example, in the passage at column 14, lines 5-49, the attribute "age" is resolved to the value "32", but there is no disclosure of indicating that the attribute "age" is resolved.

In the last sentence on page 4 of the present Office Action (and carrying over to page 5), the Examiner states:

However, Shorter discloses resolving the parameters when a function was previously processed.... .

In this regard, applicant notes again that the issue is not resolving parameters, but rather indicating that parameters are resolved. In Shorter, as interpreted by the Examiner, parameters are resolved during execution of a software program. Contrariwise, in the present invention a software program is examined prior to execution to indicate whether a parameter would be resolved during subsequent execution. To briefly recap, Shorter

operates a program, whereas the present invention examines a program for flaws prior to execution.

Thus claim 5 is believed to be patentable over the asserted combination of the Balakrishnan and Shorter references at least because neither reference teaches or suggests indicating that an input parameter is resolved if a corresponding output parameter has been indicated as resolved. It is therefore respectfully requested that the rejection of claim 5 be reconsidered and withdrawn.

Claims 6-16 are dependent on claim 5 and are submitted as patentable on the same basis as claim 5.

In addition, claim 12 recites the additional limitation that “input and output parameters correspond when they have the same name”. With respect to this limitation, the Examiner cited a passage at column 14, lines 5-20 of the Balakrishnan reference. However this passage only describes how a “set” operation may be used to set a value of an attribute of a node. This passage does not disclose that an input parameter has the same name as an output parameter.

It is therefore respectfully submitted that claim 12 is patentable on grounds that are independent of the patentability of claim 5.

Claim 17 is an independent apparatus claim that is submitted as patentable on the same basis as claim 5. Claims 18-27 are dependent on claim 17 and are also submitted as patentable on the same basis.

In the Examiner’s discussion of claim 28, the Examiner made the same comments as were included with respect to claim 17, even though the claim language of claim 28 is quite different from the claim language of claim 17. It is requested that the Examiner reconsider claim 28 in light of the fact that claim 28 is different from claim 17. It is also noted that neither of the Balakrishnan and Shorter references discloses “processing each function of a computer program prior to runtime” or determining whether a source of an input parameter would be resolved, as recited in claim 28.

It is therefore respectfully requested that the rejection of claim 28 be withdrawn, along with the rejection of its dependent claims 29-36.

Claim 37 is an independent article of manufacture claim that is submitted as patentable on the same basis as claim 5. Claims 38-45 are dependent on claim 37 and are also submitted as patentable on the same basis.

C O N C L U S I O N

Accordingly, Applicants respectfully request allowance of the pending claims. If any issues remain, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is kindly invited to contact the undersigned via telephone at (203) 972-3460.

Respectfully submitted,



August 31, 2004

Date

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